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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/612,161 | 07/02/2003 | William E. Coville | BDC-PT001.1 | 4147 |
| 3624 | 7590 | 09/08/2004 | EXAMINER | |
| VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103 | | | SOOHOO, TONY GLEN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1723 | |

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/612,161 | Applicant(s) COVILLE ET AL. | |
| | Examiner Tony G. Soohoo | Art Unit 1723 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-19, 22-25, 27-31, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 11, 20, 21, 26 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2 sheets total</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claim 1, line 6, is objected to because of the following informalities: "sir bar" should be corrected to --stir bar--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 29-31, 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by de Bruyne 4498785.

The de Bruyne **785** reference teaches a stir bar 30 with one end lighter than the other so that it is suspended in liquid and the magnetic weigh 35 is an eccentric weigh to orient the stir bar in a vertical manner so that the longitudinal axis is across the diameter of the vessel. the magnet member is enclosed by a permanent polymeric tube container, column 5, line 5.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landsberger 3356346 in view of Lim et al 4911556.

Landsberger **346** (cited on PTO 1449) teaches a magnetic stir bar which a magnet sealed in a polymeric material whereby the length is greater than the diameter than the container 12, and including a drive to produce movement up and down motion of the stir bar.

Landsberger **346** discloses all of the recited subject matter as defined within the scope of the claims with the exception of activating the drive to produce an erratic pattern of the stir bar.

The Lim reference teaches that one may provide a magnetic stirrer with a drive with a variable rate of a magnetic field to produce a fluctuating magnetic field to affect a varying motion to the magnetic stir element so to produce a more turbulent stirring, including stopping and starting the magnetic field, column 4, line 45..

In view of the teaching of by the Lim reference that it is desirable to vary the magnetic field flux across the magnetic stir member, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the drive 16 operation of Landsberger with a drive having a manually adjustable or programmable varying application of the magnetic field during the rotation of the drive so that the stir bar may better produce a more turbulent mixing.

With regards to claim 10, a person having ordinary skill in the art may easily recognize that rotation speed is an effective variable in optimizing the rate of mixing, thereby it is deemed that it would have been obvious to one of ordinary skill in the art to

determine an effective rate such as a rate of at least 10 rpm in order to produce an effective mixing without overworking the product.

6. Claims 1, 3-10, and 12-15, 18-19, 22-25, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schob 6733171 in view of Lim et al 4911556.

The Schob teaches a magnetic stir bar 1 which a magnet 1e, 1d is sealed 1a, as seen in figure 1, 1b, or in figure 21 in a material 1a 1b whereby the length is greater than the diameter than the container 3, and including a drive 2, or 2f (figure 21) to produce a rotational movement of the suspended stir bar 1.

Schob discloses all of the recited subject matter as defined within the scope of the claims with the exception of activating the drive to produce an erratic pattern of the stir bar.

The Lim reference teaches that one may provide a magnetic stirrer with a drive with a variable rate of a magnetic field to produce a fluctuating magnetic field to affect a varying motion to the magnetic stir element so to produce a more turbulent stirring. In view of the teaching of by the Lim reference that it is desirable to vary the magnetic field flux across the magnetic stir member by the drive), it is deemed that it would have been obvious to one of ordinary skill in the art to modify the drive 16 operation (of element 2 or 2f in fig 21) of Schob with a drive having a manually adjustable or programmable varying application of the magnetic field during the rotation of the drive so that the stir bar may better produce a more turbulent mixing.

With regards to claims 7-9, 13, 14-15, 27, 28, the Schob reference discloses the use of an array of magnetic core drives 2f which may provide the rotation of the stir bar. With regards to the number, positioning and activation sequence to produce the rotation of the stir bar, it is old and well known to use any number of an array of magnetic core drives to rotate a magnetic stir bar whereby the additional number of magnetic drives is merely a duplication of parts in order to optimize the workload of the drive itself. Additionally, the sequence of activation of the magnetic core drive array is merely a optimization of operation and rearrangement of operation of the drive in a manner to optimize the desired power transfer to the stir bar for the desired movement. Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the number of, position of, and activation sequence of the magnetic core drives 2f of Schob so that the drive transfer of the magnetic field to the magnetic stir bar is optimized.

With regards to claim 10, a person having ordinary skill in the art may easily recognize that rotation speed is an effective variable in optimizing the rate of mixing, thereby it is deemed that it would have been obvious to one of ordinary skill in the art to determine an effective rate such as a rate of at least 10 rpm in order to produce an effective mixing without overworking the product.

With regards to claim 22, 23, 25, note that the stir bar is asymmetrical along the horizontal axis, an eccentric weight due to the magnetic element 1a, and a lighter end 1f. Also note that there are flat surfaces along the top of 1b, top of 1a and bottom of 1a and the top of 1f and bottom of 1f.

With regards to claim 24, one may choose a polymeric material for the material of 1a whereby it is old and well known to use polymeric materials for the desirable effect of chemical resistance. Thus, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the material of the Schob reference so that the stir bar is more chemical resistant.

With regards to claim 18 note that the top is open to hold as many containers that my fit onto the open top surface.

7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schob 6733171 in view of Lim et al 4911556 as applied to claim 14 above, and further in view of Kindman et al 5529391.

Schob 6733171 in view of Lim et al 4911556 discloses all of the recited subject matter as defined within the scope of the claims with the exception of a coil plate heat transfer or incubation block.

The reference to Kindman teaches that a magnetic mixer with a three flat sided stir bar may be provided with heat 16. It is also commonly known that heating elements may be provide by a coil plate heat transfer or incubation block. In view of the teaching of Kindman that it is desirable to provide heat to a magnetic stirrer device, and whereby the use of coil plate and incubation block arrangements are known heating devices, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the Schob magnetic mixer with a coil plate heat transfer or incubation block so that the material being mixed maybe more effective controlled at a warmer temperature.

Allowable Subject Matter

8. Claims 11, 20-21, 26, 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Vellinger et al US2002/01185594, shows using a coil to move a stir bar up and down.

11. Gunter 6635492 show vertically oriented stir bars with heating.

12. Correia ii, et al 5549382 show a magnetic stir bar with an array of plural magnetic core drive and heating elements.

13. MacMichael et al 4759635, de Bryune 4534656, Gaffar 6247840, show vertical stirrers which are longer than the diameter of the container.

14. Landsberger 3749369, Bender 4162855, teaches a covered magnetic stir bar.


15. Lu et al 3680843, Cleveland et al 6176609, Haffa 4090263, Lawrence et al 4131370, Bonjour et al 3724820, Steel 2852586, 4484615, Herz et al 4568195, Maaz et al 4991973, Rains et al 4209259, Sanderson et al 4199265, teaches examples of magnetic core drives control to move a stir bar.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tony G Soohoo
Primary Examiner
Art Unit 1723
